Instruction, Intervention and Research
Resource Bibliography

Intervention Resources

Computation of Fractions: Math Intervention for Elementary and Middle Grades Students (Book)
Witzel and Riccomini. (2009). Pearson Education Inc. ISBN 0-205-56738-X.

In this clear, insightful, and practical guide, Dr. Bradley Witzel and Dr. Paul Riccomini present elementary and middle school teachers with functional strategies and activities for promoting academic success and aiding their students' mastery of key mathematical concepts involving fractions. Teachers will gain confidence and insight into how they can help their struggling math students as Witzel and Riccomini coach them through lesson plans that move from concrete to representational to abstract concepts in math as well as provide them with assessment guides for placement and measurement and reviews that bolster students' content retention. Drawing from a combination of their years of classroom experience and their extensive research and study, the authors provide in-service and pre-service teachers with step-by step directions on how to implement each lesson plan effectively in their own classrooms.

Error Patterns in Computation: Using error patterns to improve instruction (Book)
Ashlock, Robert. (2006). Ninth Edition. Pearson Education Inc. ISBN 0-13-119886-6.

This engaging book was written to model how you the teacher can make thoughtful analyses of your students' work and in doing so, discover patterns in the errors they make. The text considers reasons why students may have learned erroneous procedures and presents strategies for helping those students. You will come away from the reading with a clear vision of how you can use student error patterns to gain more specific knowledge of their strengths on which to base your future instruction.

Teaching Learners who Struggle with Mathematics: Systematic Intervention and Remediation (Book)
Sherman, etal. (2009). Pearson Education Inc. ISBN 0-13-613577-3.

How can you address the cognitive needs of your students who underachieve in mathematics? Teaching Learners who Struggle with Mathematics is based on the premise that when teachers and parents focus on how their students learn best, rather than repeatedly offering the same or very similar instructional methods and materials, progress can be made. To achieve this goal, the authors present a systematic, three-step approach to assess students' math strengths and weaknesses and plan instruction accordingly, allowing you to meet your students' individual needs. Features of the text include: case studies, instructional activities, discussion questions, and a new chapter on the mathematics topic of time and money.

Teaching Mathematics Meaningfully: Solutions for Reaching Struggling Learners (Book)

Allsopp, Kyger, & Lovin. (2007). Paul H Brookes Publishing Company. ISBN 1557668663.

Making math concepts understandable is a challenge—one that's more complex when a classroom includes students with learning difficulties. With this highly practical resource, teachers will have just what they need to teach a critical content area with confidence: research-based strategies that really work with students who have learning disabilities, ADHD, or mild cognitive disabilities. This urgently needed guidebook helps educators

- understand why some students struggle
- review the Big Ideas of math with a useful primer on major NCTM-endorsed mathematical concepts and processes
- directly address students' learning barriers with lesson plans, strategies, and photocopiable forms
- check their own strengths and needs with a thought-provoking questionnaire on their current teaching practices

With this timely book—filled with invaluable strategies adaptable for grades K–12—educators will know just what to teach and how to teach it to students with learning difficulties.

Why Is Math So Hard for Some Children?: The Nature and Origins of Mathematical Learning Difficulties and Disabilities (Book)

Berch & Mazzocco. (2007). Paul H Brookes Publishing Company. ISBN 978-1-55766-864-6.

Comprehensive and multidisciplinary, this resource gives educational decision-makers and researchers in-depth theoretical and practical insight into mathematical learning difficulties and disabilities, combining diverse perspectives from fields such as special education, educational psychology, cognitive neuroscience, and behavioral genetics.

More than 35 internationally known contributors share their expertise on

- risk factors for developing difficulties with math
- connections between mathematics and reading disabilities
- neuropsychological factors in mathematical learning disabilities
- information processing deficits
- individual difference factors in mathematics difficulties, including the influences of motivation, gender, and socio-cultural background
- math anxiety
- the role of genetics
- effective instructional interventions

Based on the most current research available, this highly informative book gives readers the foundation they need to advance research, teaching strategies, and policies that identify struggling students—and to begin developing appropriate practices that really help these students improve their math skills.

RtI Wire (Website)
http://www.jimwrightonline.com/php/rti/rti_wire.php

'One-stop' directory of free, high-quality 'Response-to-Intervention' resources available on the Internet. Links organized by categories: Understand the Model, Use Teams to Problem Solve, Select the Right Intervention, Monitor Student Progress, Graph Data for Visual Analysis.

Early Numeracy: Assessment for Teaching and Intervention: Second Edition (Book)
Wright etal. (2006). Paul Chapman Publishing. ISBN: 1-4129-1020-X.

Teaching Number: Advancing Children's Skills and Strategies: Second Edition (Book)
Wright etal (2006). Paul Chapman Publishing. ISBN: 9781412921855

Teaching Number in the Classroom with 4-8 year olds: Second Edition (Book)
Wright etal (2006). Paul Chapman Publishing. ISBN: 1-4129-0758-6.

Early Numeracy enables teachers, special educators, educational psychologists and researchers to become more knowledgeable in assessing children's number knowledge and strategies, and therefore more skills and confident in planning programs of intervention and monitoring children's progress.

In **Teaching Number**, researchers describe approaches to teaching numeracy to children aged four to eight years old, as developed in the Mathematics Recovery Program and the Count Me Too projects in Australia, Britain, and the US. They focus on teaching number skills, knowledge, and understanding within the number strand of a primary mathematics curriculum. Among the factors the suggest teachers take into account are what knowledge the child possesses, current misunderstandings and misconceptions, and what specific materials to use.

Teaching Number in the Classroom brings the principles and practice of the Mathematics Recovery Program to whole-class teaching. Central to the book is the concept of an inquiry based approach to classroom instruction. Topics covered range from beginning number and early counting strategies to multi-digit addition and subtraction right through to multiplication and division.

Differentiation Resources

How to Differentiate Instruction in Mixed Ability Classrooms (Book)
Tomlinson, Carol Ann. (2001). ASCD. ISBN: 978-0-87120-512-4

Topics in this book include background on differentiated instruction (rationale, role of teacher, learning environment, and examples), strategies for management, lesson planning, differentiation of content, process, and products, and grading.

The Differentiated Classroom: Responding to the Needs of All Learners (Book)
Tomlinson, Carol Ann. (1999). ASCD. ISBN: 978-0-87120-342-7

Topics in this book include information about differentiated classrooms, elements of differentiation, learning environments, instructional strategies, and how teachers make differentiated instruction work.

Fulfilling the Promise of the Differentiated Classroom: Strategies and Tools for Responsive Teaching (Book)
Tomlinson, Carol Ann. (2003). ASCD. ISBN: 978-0-87120-812-5

Topics in this book include background on differentiated instruction, basing instruction on student needs, teacher responses to student needs, and curriculum and instruction as vehicles for addressing student needs.

The Differentiated Math Classroom: A Guide for Teachers, K-8 (Book)
Murray, Miki. (2007). Heinemann. ISBN: 978-0-325-00996-4

This book presents the case and provides support for using differentiated instruction – a purposeful process for adapting the teaching and learning practices of the classroom to accommodate the needs of all learners – in mathematics classrooms as a tool for meeting complex challenges. The premise is that all students can learn mathematics when they have access to quality teaching and learning experiences.

English Language Learners in the Mathematics Classroom
Coggins etal. (2007). Corwin Press. ISBN: 978-1-4129-3760-3.

Whether you teach mathematics in a contained elementary classroom, as a specialized math teacher, or as an ELL teacher, this new resource will help you meet the needs of your English Language Learners. Offering strategies, guidelines, and classroom vignettes, this book demonstrates how to adjust mathematics instruction to make the learning process less language dependent while also fostering language development.

Differentiation for Special Needs Learners (Article)
Lovin. Teaching Children Mathematics. NCTM. October 2004. pg 158-167.

Article highlights characteristics of special needs learners, corresponding teaching strategies and integrating differentiation strategies into a lesson.

Instructional Resources (resource books for teachers)

Good Questions for Math Teaching: Why Ask Them and What to Ask, Grades K-6 (Book)
Peter Sullivan and Pat Lilburn, ISBN: 978-0-941355-51-3

Open-ended questions can transform classrooms into dynamic learning environments and prompt children to think creatively and critically. This useful book helps teachers define "good questions," offers teachers tips on how to create their own good questions, and presents a wide variety of examples of questions that span 16 mathematical topics, including number, measurement, geometry, probability, and data.

Good Questions for Math Teaching: Why Ask Them and What to Ask, Grades 5-8 (Book)
by Lainie Schuster and Nancy Canavan Anderson, ISBN: 978-0-941355-69-8

This new book inspires middle school teachers to develop open-ended questioning techniques. "Good questions"—or open-ended questions—promote students' mathematical thinking, understanding, and proficiency. By asking careful, purposeful questions, teachers create dynamic learning environments, help students make sense of math, and unravel misconceptions. This valuable book, which builds on Peter Sullivan and Pat Lilburn's *Good Questions for Math Teaching: Why Ask Them and What to Ask, K–6*, includes a wide variety of good questions for classroom use and offers teachers tips on how to create open-ended questions of their own.

Teaching Mathematics Vocabulary in Context (Book)
Murray, Miki. (2004). Heinemann. ISBN: 978-0-325-00634-5.

Mathematics vocabulary has the power to enhance the conceptual learning of mathematics for middle school students. It's an essential tool to help them to express their mathematical thinking coherently and clearly to peers and teachers, to share problem-solving techniques, to gain confidence, and to participate in classroom discourse. Murray offers a range of strategies that highlight the important role language plays in the learning of math. Grounded in research and developed from more than 40 years of teaching, reflecting, and learning, Murray's proven strategies are immediately usable or adaptable by teachers.

Thinking Mathematically: Integrating Arithmetic and Algebra in Elementary School (Book)
Carpenter etal. (2003). Heinemann. ISBN: 0-325-00565-6.

Thinking Mathematically provides numerous examples of classroom dialogues that indicate how algebraic ideas emerge in children's thinking and what problems and questions help to elicit them. Special features of the book help teachers develop their own understanding of mathematics along with their students'.

Children's Mathematics: Cognitively Guided Instruction (Book)
Carpenter etal. (1999). Heinemann. ISBN: 0-325-00137-5.

Based upon more than 20 years of research, this book portrays the development of children's understanding of basic number concepts. The authors offer a detailed explanation and numerous examples of the problem solving and computational processes that virtually all children use as their numerical thinking develops. They also describe how classrooms can be organized to foster that development.

Young Mathematicians at Work: **Constructing Number Sense, Addition, and Subtraction (Book)**
Fosnot and Dolk. (2001). Heinemann. ISBN 978-0-325-00353-5

The first in a three-volume set, *Young Mathematicians at Work* focuses on young children between the ages of four and eight as they construct a deep understanding of number and the operations of addition and subtraction. Rather than offer unrelated activities, Fosnot and Dolk provide a concerted, unified description of development, with a focus on big ideas, progressive strategies, and emerging models. Drawing from the work of the Dutch mathematician Hans Freudenthal, they define mathematics as "mathematizing"—the activity of structuring, modeling, and interpreting one's "lived world" mathematically. And they describe teachers who use rich problematic situations to promote inquiry, problem solving, and construction, and children who raise and pursue their own mathematical ideas.

In contrast to other books on math reform, *Young Mathematicians at Work* provides a new look at the teaching of computation. It moves beyond the current debate about algorithms to argue for deep number sense and the development of a repertoire of strategies based on landmark numbers and operations. Sample minilessons on the use of the open number line model are provided to show you how to support the development of efficient computation.

Young Mathematicians at Work: **Constructing Multiplication and Division (Book)**
Fosnot and Dolk. (2001). Heinemann. ISBN 978-0-325-00354-2

In this second volume in a series of three, Fosnot and Dolk focus on how to develop an understanding of multiplication and division in grades 3-5. Their book:

- describes and illustrates what it means to do and learn mathematics
- provides strategies to help teachers turn their classrooms into math workshops that encourage and reflect mathematizing
- examines several ways to engage and support children as they construct important strategies and big ideas related to multiplication
- takes a close look at the strategies and big ideas related to division
- defines modeling and provides examples of how learners construct models—with a discussion of the importance of context
- discusses what it means to calculate using number sense and whether or not algorithms should still be the goal of computation instruction
- describes how to strengthen performance and portfolio assessment
- emphasizes teachers as learners by encouraging them to see themselves as mathematicians.

Young Mathematicians at Work: **Constructing Fractions, Decimals, and Percents (Book)**
Fosnot and Dolk. (2002). Heinemann. ISBN 978-0-325-00355-9.

In this third volume in a series of three, Fosnot and Dolk focus on how children in grades 5-8 construct their knowledge of fractions, decimals, and percents. Their book:

- describes and illustrates what it means to do and learn mathematics.
- contrasts word problems with true problematic situations which support and enhance investigation and inquiry.
- provides strategies to help teachers turn their classrooms into math workshops.
- explores the cultural and historical development of fractions, decimals, and their equivalents and the ways in which children develop similar ideas and strategies.
- defines and gives examples of modeling, noting the importance of context.
- discusses calculation using number sense and the role of algorithms in computation instruction.
- describes how to strengthen performance and portfolio assessment.
- focuses on teachers as learners by encouraging them to see themselves as mathematicians.

Developing Number Concepts: Counting, Comparing and Pattern (Book 1)
Richardson, Kathy. (1999). Dale Seymour Publications. ISBN: 0-7690-0058-4

Developing Number Concepts: Addition and Subtraction (Book 2)
Richardson, Kathy. (1999). Dale Seymour Publications. ISBN: 0-7690-0059-2

Developing Number Concepts: Place Value, Multiplication and Division (Book 3)
Richardson, Kathy. (1999). Dale Seymour Publications. ISBN: 0-7690-0060-6

Make number concepts come alive with hand-on activities that help young children to see and feel math. Primary-level teachers have depended for years on Kathy Richardson's first book, Developing Number Concepts Using Unifix Cubes. Now this master teacher's ideas have been expanded into a complete series: Book 1: Counting, Comparing and Pattern, Book 2: Addition and Subtraction, Book 3: Place Value, Multiplication and Division.

In addition, the indispensable "Planning Guide for Developing Number Concepts" lets teachers decide how to use both the teacher-directed and independent activities. Teachers choose from two ways of planning – by children's needs or by grade level. All new classroom management ideas and teaching suggestions make this planning guide a must for every primary mathematics classroom.

Teaching Student Centered Mathematics Grade K-3. Volume 1 (Book)
VandeWalle and Lovin. (2006). Pearson Education. ISBN: 0-205-40843-5.

Teaching Student Centered Mathematics Grade 3-5. Volume 2 (Book)
VandeWalle and Lovin. (2006). Pearson Education. ISBN: 0-205-40844-3.

Volume 1: Van de Walle (Virginia Commonwealth University) and Lovin (James Madison University) provide practical guidance and proven strategies for teachers of kindergarten through third grade. In addition to many of the topics and features from Van de Walle's text, *Elementary and Middle School Mathematics*, this resource offers new material written specifically for the early grades. Nearly 200 classroom activities are included, and in each chapter, one activity includes a step-by-step lesson plan for expansion.

Volume 2: Van de Walle (emeritus, Virginia Commonwealth University) and Lovin (education, James Madison University) outline the concepts of teaching through problem solving and planning problem-based lessons, and explain how children learn number sense, fraction and percentage computation, geometric thinking, and algebraic reasoning. The resource also provides 150 classroom activities, 11 sample lessons, and assessment notes.

Uncovering Student Thinking in Mathematics: 25 Formative Assessment Probes. (Book)
Rose, Minton, Arline. (2006). Corwin Press. ISBN: 1-4129-4037-0.

Students learn at varying rates, and if a misconception in mathematics develops early, it may be carried from year to year and obstruct a student's progress. To identify fallacies in students' preconceived ideas, ***Uncovering Student Thinking in Mathematics*** offers educators a powerful diagnostic technique in the form of field-tested assessment probes—brief, easily administered activities to determine students' thinking on core mathematical concepts.

Designed to question students' conceptual knowledge and reveal common understandings and misunderstandings, the probes generate targeted information for modifying mathematics instruction, allowing teachers to build on students' existing knowledge and individually address their identified difficulties.

Now I Get It: Strategies for Building Confident and Competent Mathematicians, K-6 (Book)
O'Connell, Susan. (2005). Heinemann. ISBN 978-0-325-00766-3.

As she did in her popular *Introduction to Problem Solving*, O'Connell provides a practical guide to teaching math for understanding and clarity, only this time moving one step further to provide a complete picture of elementary math instruction. She presents advice and insight about:

- what a teacher's role is during math time
- how to actively engage your students in mathematical thinking, and how to know when they are connecting with math concepts or may require further support
- how to teach both computational skills and mathematical thinking skills
- how to use problem solving, cooperative projects, writing assignments, and real-life examples to stimulate and maintain interest
- how to incorporate math talk and vocabulary into your lessons.

Instructional Resources (resources for use with students)

Contexts for Learning Mathematics (Instructional Modules – K-6)
Fosnot. (2007). Heinemann. ISBN 978-0-325-01004-5, 0-325-01004-8.

The new *Contexts for Learning Mathematics* series by Catherine Fosnot and colleagues from Mathematics in the City and the Freudenthal Institute uses carefully crafted math situations to foster a deep conceptual understanding of essential mathematical ideas, strategies, and models. Building on the ideals of a math workshop, each unit provides a two-week sequence of investigations, minilessons, games, and other contexts for learning. The series' 18 classroom-tested units are organized into three age-appropriate packages.

• *Investigating Number Sense, Addition, and Subtraction* (Grades K–3) supports the development of such fundamental topics as place value, compensation and equivalence, addition and subtraction on the open number line, and the efficient use of five- and ten-structures.
• *Investigating Multiplication and Division* (Grades 3–5) explores with increasing sophistication big ideas in multiplication and division including systematic factoring, the distributive, associative, and commutative properties as well as their use in computation.
• *Investigating Fractions, Decimals, and Percents* (Grades 4–6) examines fundamental topics such as equivalence of fractions, how to multiply and divide with fractions, proportional reasoning, rates, and the ordering of decimals.

Whether used as supplemental units or as replacement units, *Contexts for Learning Mathematics* provides you with the tools you need to engage all of your students in the study of mathematics tools.

Do the Math (Instructional Modules – Grades 2-5)
Burns, M. (2008). Scholastic. http://teacher.scholastic.com/products/dothemath/index.htm

Created by Marilyn Burns, along with a team of Math Solutions master classroom teachers, *Do The Math* gives students who have fallen behind the chance to catch up and keep up. Focusing on Number and Operations, the cornerstone of elementary mathematics, the program teaches students the basics of math—computation, number sense, and problem solving. *Do The Math* helps students develop the skills they need to compute with accuracy and efficiency, the number sense they need to reason, and the ability to apply their skills and reasoning to solve problems.

Knowing Mathematics (Intervention Program – Grades 4-6)
Ma, L. & Kessel, C. (2003). Houghton Mifflin.
http://eduplace.com/intervention/knowingmath/prod_overview/index.html

Knowing Mathematics is a small-group mathematics intervention program for fourth- through sixth-graders who are two or more years below grade level. Combining best practices of East Asian and U.S. instruction, it is designed to vertically accelerate students to grade level.

Students are provided with a new way of learning mathematics, different from their previous experiences that may have been accompanied by failure and frustration. At the same time, the curriculum draws on the mathematical knowledge that students already have, although fragmentary and insufficient, to repair and re-organize it to build a sound foundation for future learning.

Math Recovery (Intervention Program – Grades K-3)
US Math Recovery Council (USMRC). http://www.mathrecovery.com/

Math Recovery focuses on K – 3 students and has special education applications. The primary participants in Math Recovery are first grade, at-risk students. The goal is to intervene as early as possible before these at-risk students are too far behind their peers. It involves intensive one-on-one teaching of these at-risk students that focuses on accelerating children's mathematical learning over a 10 – 15 week period. Specific aims of the Math Recovery program are to:

- Identify students "at risk" by means of a structured and objective assessment system that allows educators to know exactly where students are in their mathematical development and apply early, short term intervention.
- Provide trained Math Recovery specialist teachers with the intervention and detailed instructional system that increases student performance in basic arithmetic skill through intensive, individualized instruction.
- Build student confidence as Math Recovery students work one-on-one with the trained Math Recovery Teacher and help students find success in mathematics and other curriculum areas.
- Offer comprehensive, sustainable and innovative staff development that ensures quality instruction by highly-trained Math Recovery teachers.
- Influence and inform curriculum development and school-wide mathematics programs, and ensure compatibility with all standards-based math programs.
- Apply a research-based approach to developing numeracy competence that gives teachers extensive, current knowledge of assessment and teaching which is otherwise unavailable.

PALS – Peer Assisted Learning Strategies (Program – K-6)
http://kc.vanderbilt.edu/pals/

PALS materials for mathematics are available for grades K-6. Materials are minimal and inexpensive. PALS is meant to supplement, not replace, other reading and math instruction. K-PALS is implemented 2 times a week for approximately 30 minutes per session. First-Grade PALS is implemented 3 times a week for approximately 30 minutes per session. Grades 2-6 PALS Math is implemented 2 times a week for approximately 30 minutes per session. Manuals for each grade level cost $35 and student materials for each grade level cost $25. Copies of student materials will need to be made to use the program. Time will be needed to train the students in using the program.

Transitional Mathematics (Intervention Program – Grades 5-9)
Woodward, J. & Stroh, M. Sopris West.
http://store.cambiumlearning.com/ProgramPage.aspx?parentId=019005298&functionID=009000008&pID=Transitional%20Mathematics&site=sw

Transitional Mathematics (TransMath) was built on over two decades of research. *TransMath* targets instruction to fewer topics in greater depth, so students master key foundational skills before moving on to more complex topics. Three levels in three years prepare students for algebra success.

TransMath:

- Teaches fewer topics in greater depth
- Provides numerous visual representations to help conceptualize the mathematics
- Meets individual student needs
- Provides a logical sequence, ample practice, and an appropriate pace
- Aligns with National Council of Teachers of Mathematics (NCTM) Standards
- Ensures accurate placement and progress monitoring
- Provides a solid alternative to basal curricula
- Supports teachers with ongoing professional development
- Provides a balance between procedural knowledge and conceptual understanding

Research Resources

Number Sense Growth in Kindergarten: A Longitudinal Investigation of Children at Risk for Mathematics Difficulties (Article)
Jordan and Colleagues (Jan/Feb 2006). Child Development, Volume 77, Number 1, Pages 153 – 175.

http://www.udel.edu/cmp2/kindergartenpaper.pdf

Screening for Mathematics Difficulties in K-3 Students (Pamphlet)
Clarke, Center on Instruction

http://www.centeroninstruction.org/files/COI%20Math%20Screening.pdf

A Preliminary Investigation into the Identification and Development of Early Mathematics Curriculum-Based Measurement (Article)
Clarke, Shinn, School Psychology Review, Vol 33, 2004.

https://www.aimsweb.com/uploaded/files/06.clarkeshinn.pdf

This study examines the reliability, validity, and sensitivity of four experimental early mathematics measures designed for use in early identification and formative evaluation. The measures were based on the principle of number sense and were designed to assess the precursors of mathematics understanding learned before children are able to do formal mathematics. Results showed that the four experimental measures each had sufficient evidence of their reliability, validity, and sensitivity.

Using Measures of Number Sense to Screen for Difficulties in Mathematics: Preliminary Findings (Article)
Chard, David

https://www.aimsweb.com/uploaded/files/numbersense.pdf

EDThoughts: What We Know About Mathematics Teaching and Learning (Book)
McREL. (2002). ISBN: 1-893476-02-2.

The purpose of this volume is to support standards-based reform of mathematics education. For each question addressed, background is provided from perspectives of research and best practices, followed by implications for improving classroom instruction.

Second Handbook of Research on Mathematics Teaching and Learning (Book)
NCTM. (2007). ISBN: 978-1-59311-586-9 (Vol 1), 978-1-59311-588-3 (Vol 2)

Clements and Sarama author a Chapter on Early Childhood Mathematics Learning Chapter 12 Volume 1.

Building Blocks of Early Childhood Mathematics. (Article)
Clements and Sarama. Teaching Children Mathematics. NCTM. April 2003. pg 480-484.

Early Identification and Interventions for Students With Mathematics Difficulties (Article)
Gersten etal. (2005). Journal of Learning Disabilities. Vol 28, No. 4, 293-304.

This article highlights key findings from the small body of research on mathematics difficulties (MD) relevant to early identification and early intervention. The research demonstrates that (a) for many children, mathematics difficulties are not stable over time; (b) the presence of reading difficulties seems related to slower progress in many aspects of mathematics; (c) almost all students with MD demonstrate problems with accurate and automatic retrieval of basic arithmetic combinations, such as 6 + 3. The following measures appear to be valid and reliable indicators of potential MD in kindergartners: (a) magnitude comparison (i.e., knowing which digit in a pair is larger), (b) sophistication of counting strategies, (c) fluent identification of numbers, and (d) working memory (as evidenced by reverse digit span). These are discussed in terms of the components of number sense. Implications for early intervention strategies are explored.

How Students Learn: Mathematics in the Classroom (Book)
Donovan and Bransford. (2005). National Research Council. ISBN-10: 0-309-08949-2.

How Students Learn: Mathematics in the Classroom builds on the discoveries detailed in the best-selling *How People Learn*. Now these findings are presented in a way that teachers can use immediately, to revitalize their work in the classroom for even greater effectiveness.

This book shows how to overcome the difficulties in teaching math to generate real insight and reasoning in math students. It also features illustrated suggestions for classroom activities. Chapter 6 highlights fostering the development of whole number sense.

Mathematics Interventions & Algebra Readiness: Best Evidence from Scientific Research and Research Mathematicians (Presentation)
Gersten, Russell. (2008). Center on Instruction - Math.

http://centeroninstruction.org/files/Gersten%20Algebra%20Readiness%204%202%20081.pdf

The powerpoint presentation highlights what to teach (highlights from publicly released material from Presidentially appointed National Math Advisory Panel), how to teach (findings from meta analysis work of Center On Instruction/ RG Research Group and parallel work from National Math Advisory Panel, and a few details on interventions teaching fractions through explicit language and CRA procedures.

Progress Monitoring for Elementary Mathematics (Presentation)
Stecker, Pamela. (2006). Presented at the Center on Instruction Mathematics Summit.

http://center-for-instruction.org/files/Pam%20Stecker1.pdf

The presentation describes progress monitoring, explains common techniques that are often mistaken for progress monitoring, discusses features of progress monitoring in elementary grades, reviews brief history of progress monitoring measures in mathematics, and provides an overview of commonly used computer and Web-based progress monitoring systems.

Curriculum-Based Measurement in Mathematics: An Evidence-Based Formative Assessment Procedure (Pamphlet)
Lembke & Stecker. (2007). Center on Instruction.

http://www.centeroninstruction.org/files/CBMeasurements.pdf

This pamphlet summarizes procedures for implementation of curriculum-based measurement in mathematics, measures that can be used, implications for practice, and a summary of selected research.

Progress Monitoring in the Context of Response to Intervention (manual, powerpoint, and handouts from a presentation)
Fuchs, L., Fuchs, D., Hintze, J., Lemke, E. (2006). Center on Instruction.

Manual - http://www.centeroninstruction.org/files/plugin-UsingCBMRTI_manual.pdf
Powerpoint - http://www.centeroninstruction.org/files/plugin-UsingCBMRTI_powerpoint.pdf
Handouts - http://www.centeroninstruction.org/files/plugin-UsingCBMRTI_handouts.pdf

Presented at the 2006 Summer Institute on Student Progress Monitoring, this "Progress Monitoring in the Context of Responsiveness-to-Intervention" by Lynn Fuchs, Douglas Fuchs, John Hintze, and Erica Lemke provides clear distinctions between services offered in the different tiers of RTI and addresses both reading and math. This resource includes the PowerPoint presentation, a manual, and handout materials that include an appendix for additional RTI resources.